Prof. Paulo R. G. Kurka
Faculty of Mechanical Engineering
Universidade Estadual de Campinas (UNICAMP)
São Paulo, Brazil

Dynamics of railway cargo cars
The seminar will be given in English

The seminar presents results from models of longitudinal and transversal train dynamics. In train forces in draft gear mechanisms and wheel/rail contact are shown for the operational conditions of convoy acceleration, track disturbances and curve approximation and departure. The effect of wheel-rail contact forces is also analyzed for different bogie suspension configurations. Such an analysis yields useful data that can be employed in decisions of increasing operational safety, the selection of more efficient and durable components/materials and strategies for energy saving. The results are obtained in the scope of a scientific cooperation between UNICAMP and VALE/SA. VALE is a world leading mining exploitation and transport company. The company runs two major mine operations in Brazil: Carajás (1,000km) and Vitória-Minas (540km).